In 1986-87, the Learning Assessment Retention Consortium (LARC) conducted Year One of the LARC Student Outcomes Study. The study included the participation of 29 colleges and 7,500 students who were enrolled developmental writing courses during Fall 1986. The study is the first of its kind in the state to jointly measure students outcomes, including skills acquisition, student goal satisfaction, and retention in courses, and programs. A second phase was conducted from July 1, 1987 to August 31, 1988, continued and expanded that study in three areas, or components: First, the 1986-87 7,500 study students outcomes evaluation model was expanded to address developmental reading programs. Twenty-nine colleges were selected to implement the model in that area; approximately 7,000 students were included in this effort.

This year the study project will continue to be directed by the LARC Research Subcommittee. Rancho Santiago College will be the Fiscal agent and responsible institution. The study project will apply the same methodologies to instruction in mathematics.
LARC Student Outcomes Study, Phase Three: Mathematics Student Outcomes

This proposal outlines a study plan by which the Learning Assessment Retention Consortium (LARC) will conduct the 1988-89 Student Outcomes Study in the program area of mathematics. Examining student outcomes in the area of mathematics will provide information for local colleges and the state to use in their accountability endeavors.

While the potential outcomes, or results and impacts, of postsecondary education are many, the LARC Research Committee selected three intended community college outcomes to be measured by the study design:

1) Student persistence in courses and in college,
2) Student educational goal satisfaction, and
3) Skills acquisition in courses.

LARC has successfully completed this study in two remedial program areas, writing and reading. This proposal provides for implementing the outcomes study design for a larger scope of the mathematics curriculum, remedial through transfer-level. By making available to study colleges standard definitions of terms, criteria, and measurements, the comparability of the results is assured and the findings are more valuable and meaningful. Colleges will be able to anonymously compare their findings with those of like colleges. A combined data base will make it possible to make statements about groups of community college students enrolled in math programs by course. Participating colleges in prior LARC Outcomes studies have been able to use the findings for program evaluation and improvement. In short, the findings have been of value in many ways.

Using pre- and post-testing, student questionnaires, and data collection from college records, 48 colleges to date, involving 10,000 students, have implemented the outcomes evaluation model in 1986-87 and 1987-88. For the math study, we anticipate the participation of 15 to 30 colleges and 300 to 500 students per college. The samples of each participating college are expected to be larger than in prior outcomes studies because the math study will involve a broader range of course levels.
LARC Student Outcomes Study, Phase Three: Mathematics Student Outcomes

1. Specific Educational Program Being Addressed

[NO “PROGRAM” ACCOMPANIES THIS DOCUMENT.]
2. Specific Problems Being Addressed

This proposal outlines a study plan by which the Learning Assessment Retention Consortium (LARC) will conduct the 1988-89 Student Outcomes Study in the program area of mathematics. Examining student outcomes in the area of mathematics will provide information for local colleges and the state to use in their accountability endeavors.

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3. Population To Be Served

[NO "POPULATION" ACCOMPANIES THIS DOCUMENT.]
4. Objectives

[NO “OBJECTIVES” ACCOMPANIES THIS DOCUMENT.]
5. Workplan Narrative

Work Statement

The implementation of the LARC Student Outcomes Study in math programs will include the following activities:

1) To measure skills acquisition, appropriate tests for each level will be selected by the LARC Research Committee. These tests will be used to pre-test the students in the sample at the participating colleges during the first two weeks of the Fall 1988 semester. A parallel test will be used to post-test the students at the end of the math course. Students are tested in the classroom, and the results will provide for the analysis of skills growth.

2) To measure student goal satisfaction, questionnaires will be completed by students in the sample in the classroom at the beginning and at the end of the semester. Long-term educational goals will be identified by the students as well as course goals and intentions regarding the completion of the course.

3) To study retention in courses and in college, participating college staff will collect information from the college's data base regarding enrollment patterns of students in the sample.

All data will be analyzed at the Palomar College Institutional Research and Planning Office, which is coordinating and directing the study. While housed at Palomar College, Rancho Santiago College, the director of study years one and two, will continue to be involved and provide support to Palomar. The LARC Research Committee will serve as the Advisory Committee for the project and will meet periodically throughout the year. This committee will be responsible for the research design, selection of the study sample, and the instruments.

Two planning meetings of contact persons from the participating colleges will be held during the project year. All California community colleges will be invited to participate. Those choosing to do so will select a representative sample of math sections for inclusion in the total sample.

Dissemination of the findings of the study will continue to take place through distribution of reports and presentations to groups and conferences.
Project Organization

A. General Approach

The Project Director will be Dr. Robert Barr, Director of Institutional Research and Planning and Math Instructor at Palomar College, which will act as the fiscal agent. Assisting Dr. Barr as Project Associate Director will be Annette Parker, Associate Professor of Mathematics at Palomar College. The LARC Research Committee will act as the Advisory Committee.

Increasing student success is a major goal of the California community colleges. This goal is also the focus of LARC, the Learning Assessment Retention Consortium. Members of this network--formed in 1981 and including 80 colleges--share a common purpose: to translate concern about student success into local action. From the beginning, LARC has identified research as a major priority and a critical link in accountability.

Prior to the first 1986-87 Student Outcomes Study, LARC had received three FII grants. The Consortium's structure and technical expertise has provided for the successful completion of the first multi-college, multi-measures student outcomes study in California community colleges as well as several related studies, reports, and projects. Those studies and reports have been widely disseminated in California and nationwide and have had major impacts upon individual participating college programs and state level policy.

The LARC Research Committee includes community college professionals from the research area, and reading, writing, and math programs. California research organizations and other professional associations are represented on the committee, and there is frequent exchange between committee members and constituent groups.

Staffing

1. Dr. Robert B. Barr, Director of Institutional Research and Planning, Palomar College, 15% time, 12 months.

   Dr. Barr will serve as principle researcher and Project Director and be responsible for all deliverables, project organization, general supervision of all project staff, and fiscal accountability. Dr. Barr will be the lead author of the Preliminary and Final Reports.

2. Annette Parker, Associate Professor of Mathematics, Palomar College, 30%, 12 months.

   Ms. Parker will serve as co-researcher and Project Associate Director. She will be primarily responsible for supervising data collection and the statistical analysis of the data and will coauthor the Preliminary and Final Reports.

3. Leigh Long, Research Analyst (Staff Assistant), Palomar College, 50%, 12 months.
Ms. Long will serve as the primary research and administrative primary support staff for
the project. She will assist with statistical analysis programming, supervise data entry
personnel, coordinate travel and meeting arrangements, act as contact person for
participating colleges and the Research Committee members, maintain accounting
and fiscal records, and discharge other administrative and research assistant duties as
required.

4. Temporary Data Entry personnel, 2,083 person hours.

Several temporary people will be hired at $5.00 per hour to enter data collected from
pre- and post-testing, the questionnaires, and college records.

5. Pam Taylor, secretary, Office of Institutional Research and Planning, Palomar College,
10%, 12 months.

Ms. Taylor will serve as the project's secretary and handle the typing and word
processing associated with project correspondence and report writing.

6. LARC Research Committee members, volunteer time.

This committee is composed of eight members who provide advice on the test
instruments, sample design, research design, project organization, and reviews the
reports and analytical work of the Project's Director and Associate Director. They will
meet as a group several times during the project year.

Experience

LARC has conducted and coordinated grant funded research activities annually since its
inception in 1981. Most recently in 1987-88, the statewide consortium is directing year two of
the LARC Student Outcomes Study, the Reading Outcomes Study. The year one Writing
Outcomes Study was successfully completed during 1986-87 and has received state and
national acclaim. The proposed third year Math Outcomes Study maintains the same general
organizational structure as utilized in year one and two, including a Research Committee, a
principle researcher acting as staff to the project, and the umbrella leadership of the Statewide
LARC Executive Committee and its chairperson. The resumes for the principle researcher, Dr.
Robert Barr, and his co-researcher, Annette Parker, are included in this proposal. Also
included is the resume of one of the eight member of the Research Committee, Arthur Dull,
Instructor of Mathematics at Diablo Valley College. The preliminary and final reports for year
one are available as well as the preliminary report for year two.
6. Expected Outcomes

[NO “OUTCOMES” ACCOMPANIES THIS DOCUMENT.]
7. Evaluation Plan

[NO “EVALUATION” ACCOMPANIES THIS DOCUMENT.]
8. Dissemination Plan

[NO "DISSEMINATION" ACCOMPANIES THIS DOCUMENT.]
NO "BUDGET NARRATIVE" ACCOMPANIES THIS DOCUMENT.]